

White Paper

ARTIFICIAL INTELLIGENCE FOR THE PMO

What it means and how you can leverage it

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Part 1: Introduction

Artificial intelligence (AI) has been a developing technology for organizations seeking to advance their digital initiatives. In fact, for certain industries, particularly those already infused with digital applications, AI has become a standard component of their day-to-day operations. The scope of AI is evolving as more diverse industries are recognizing the benefits of AI, including its applications in supporting project portfolio management (PPM) tasks and the PMOs that perform them. AI can provide powerful benefits for PMOs and their organizations, including:

- Streamlining operations
- Improving decision-making
- Increasing accuracy
- Identifying risks and negative behavior patterns

In this paper, we will explore analytical artificial intelligence as it relates to project portfolio management. We will define what analytical AI is and what it isn't, explore its practical applications in today's fast-paced digital environment, and discuss its impact on the PMO. We'll also share steps for bridging the gap in AI adoption and share some examples of AI in action. By the end of this paper, you'll be informed on the ways that AI can benefit your organization and feel more empowered to take the next steps in integrating AI into your project portfolio management operations.

What is AI?

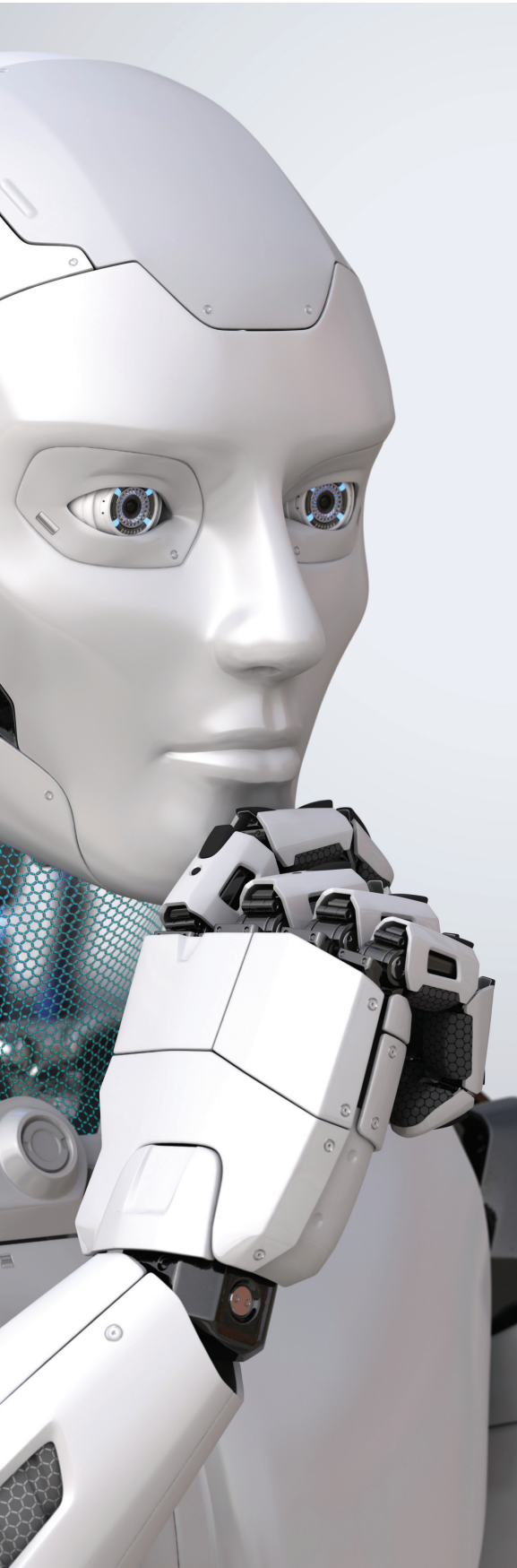
When we hear the term “AI,” we might jump to extreme uses engrained through pop culture and envision something along the lines of the Star Wars depiction of C3PO or JARVIS from the Avengers movie franchise. Other visuals might be self-driving cars or some robotic assistant. However, AI doesn’t have to be that complex to be considered “intelligent,” and it doesn’t require a human face or a human voice to perform tasks that benefit human users. Simply put, artificial intelligence is comprised of algorithms that exhibit any behavior that we humans consider “intelligent.”

For the purposes and application to project portfolio management, AI can further be defined as “data analysis designed to help you identify certain behaviors, data sets, etc. using Bayes’ Theorem.” Loosely defined, Bayes’ Theorem calculates the conditional probability of an event occurring based on information about another event that has already occurred. We aim to leverage AI capabilities for improvement of existing processes.

Simply put, if A happens a lot and B happens every time A happens, then there’s a correlation between the two of them. The idea is that you identify the root behavior, not just the sum of the behaviors. This modeling allows AI to extrapolate outcomes based on existing information and despite missing information. Under this definition and applied to PPM, examples of AI include:

- Machine learning: Computer-based data analysis designed to identify the correlation between certain behaviors and certain outcomes.
- Aggregated analysis identifying bottlenecks or gaps in resources and resource capacity.
- Natural language processing (NLP): Human language interaction making it easier and more convenient for laymen to engage with and understand their data.
- Insight and accessibility to data that allows decision-makers to respond better, quicker and more accurately.





What AI is Not

The pop culture concepts mentioned above have created misunderstandings about the true capabilities of artificial intelligence (for now, anyway). Let's look at a few things that AI cannot do, as it relates to project portfolio management.

- **Artificial intelligence cannot replace people.**

Yes, AI can certainly automate various low-value tasks commonly performed by humans — like the way auto attendants and interactive voice response systems have replaced live phone operators. However, there are simply too many nuances in PPM to render the human component obsolete. For example, your AI can craft a schedule and assist you in resource allocation. However, that capability is dependent upon information your PMO provides. It's the PMO who knows that a team member has been feeling under the weather and might need to leave early, and it's the PMO who has to configure that information into the AI's planning function.

- **Artificial intelligence cannot do the job for you.**

As noted above, you can automate many tasks with AI. The key to that last sentence, however, is the word *you*. AI is a tool, not a team member and its capabilities, even those that seem eerily human and intuitive in their execution, require a human orchestrator to teach them and feed them data to analyze.

- **Artificial intelligence does not ensure success — but it does enable it.**

Implementing AI in your PMO activities is not a one-way ticket to success. However, AI does make the pursuit of success a whole lot easier for PMOs, team members and stakeholders. Through the automation of standard planning tasks alone, for example, you can pull your PMO out from beneath the stack of spreadsheets and out of endless planning meetings and direct them to more important tasks — like finding new ways to deliver value to your organization.

Why AI is Important

It might be tempting for many organizations to dismiss AI as a fad or unnecessary digitization, particularly when it comes to project portfolio management. Many stakeholders weigh the risk of AI implementation against the pain of growth and change and find only deficits. While these are all true and credible claims, there are undeniable truths that AI can help address for the growth and advancement of your business.

1. There is a growing dependence on PMOs to do more with less.

The demands on today's PMOs are greater than ever, yet their budgets are tighter, their resources are stretched further and their timelines are shorter. They are bound by the demands of customers, stakeholders and the teams they oversee, and they must balance it all with a razor-thin margin of error. PMOs need as much support as possible to achieve desired outcomes.

2. The pandemic has shown us the need for faster, more agile change.

The rolling shutdowns and quarantines showed many businesses just how prepared — or unprepared — they were for rapid, drastic changes. Adapting on the fly is critical to survival in uncertain times and the last year has shown many businesses just how important the PMO can be in facilitating those changes — if they are equipped with the right tools.

3. A competitive advantage can make all the difference — if you're the one who has it.

As noted above, the pandemic was a wake-up call for organizations in every industry that they were not as prepared as they thought they were for sweeping, lightning-quick change. Organizations that implement AI and all the benefits it affords will have a distinct advantage over their competitors who decide to sit this one out.

4. AI can transform your PMO and your business.

As recent history has unfolded, it has become clear that organizations of all types will only become more reliant on technology as time goes on. AI can help transform your business, nonprofit or government organization, making it stronger, adaptive, more agile and better prepared for whatever challenges may come in the days ahead.



Part 2: AI's Impact on the PMO

The good news for project and portfolio practitioners is that projects are an ideal environment for AI. For any repeatable project, machine learning capabilities can identify patterns and the opportunities are great for improvement and impact. Even for non-conventional projects, AI poses significant benefit in that it can automate many of the complex and ambiguous aspects of the planning and analysis process.

AI's PMO Benefits

Let's take a deeper look at some of the other benefits AI can provide for the PMO and PPM activities.

Reduces uncertainty: AI results in fewer uncontrolled variables not just at the project level, but across all organizational levels.

- AI leverages historical information derived from a centralized database that provides visibility into all areas of uncertainty.
- You can then apply information gleaned from AI-recognized trends and outcomes to current projects. This allows for revision and improvement.
- AI can further be applied to other aspects of project and PMO performance, including budget, risk, scheduling and resourcing.

Eliminates inconsistency: AI ensures that subjective decision-making is restricted, allowing technology to help drive objectivity.

- AI has no biases, makes no mistakes, provides answers based on data not feelings, and never tires, gets ill or grows frustrated (just like the Terminator).
- AI is not pressured to give the answer that you want to hear based on internal concerns or external office politics.

Improves projections: AI replaces precision with the illusion of accuracy with actual accuracy.

- AI relies on an authentic understanding of the past, absent of human optimism or pessimism.
- AI relies on integrated data and applies that to future projections.
- AI provides a keen, data-driven understanding of all aspects of a project.

"There's nothing that a project loves more than data. Everything we do generates data. When you've got that data, it's fuel for AI to consume and generate value for the business. When you allow that AI technology to apply itself across all of your data, then you can start looking at how it can start delivering value to you and avoid having to spend so much time on low-value, boring, and time-consuming work that no one likes doing but has to be done."

Andy Jordan
President, Roffensian Consulting

Increases ROI: The executive suite will endorse AI because it supports the generation of consistently greater value from the same set of resources.

- AI provides greater visibility into what a PMO can do and what it should do.
- This visibility leads to a greater understanding and strategies that connect to performance through execution.
- AI supports better project selection — better investments in the right work at the right time, in the right way.
- AI makes changes easier, resulting in less disruption and increased time to invest in more valuable action.

AI's PMO Risks

In the benefit assessment above, the positives are largely attributed to technology. In contrast, the AI risks to the PMO are largely attributed to the human side of project portfolio management. We will address that in the next section, but first, let's examine a few of the more common problems.

Lack of trust: Many people struggle to automate tasks, despite that fact that technology would actually do a more complete and error-free job.

Fear of the unknown: Many individuals fear what they don't understand. In addition to the more humorous misperceptions (e.g., AI will become sentient; AI will malfunction in some harmful, catastrophic way), there is a fear that AI will simply not perform as programmed.

Resistance to change: Resistance to change is one of the most common risks posed by the implementation of AI. Humans are, quite simply, afraid to do things differently. The longer something has been done a certain way, the more resistant many people will be to doing it differently in the future.

Refusal to accept current shortfalls: No one likes to admit they have deficits and there can be something particularly grating about having those deficits overcome by a piece of technology (e.g., the way a self-driving car can replace an error-prone driver).

Excessive disruption: Humans aren't just resistant to change on principle alone. Change is, quite frankly, disruptive to performing one's daily tasks and until fully implemented, can create more work instead of less.

Skepticism: The root of many of the above risks lies in skepticism. Individuals struggle to trust a process they have not seen work for themselves.

What can be done to address these risks and sell the benefits of AI to the PMO and their teams? Let's take a deeper look.



Part 3: Bridging the Gap in AI Adoption

When it comes to implementing changes that accompany AI, it can be difficult to get users on board at first. But like any change management effort, there is a degree of art and science required to make it a successful outcome. For a change like adding an AI component to your organization, there are some cautions to be aware of and helpful tips to safeguard your investment.

1. Focus on the benefits of AI: What is possible?

One of the most common ways to garner support for integration is to answer the age-old question: What's in it for me? Showing people how AI adoption will benefit them is an incredible way to resonate with your audience and generate the buy-in you need for success. Show them what could be achieved and what is possible with the adoption and integration of AI in their daily tasks. Will it save time? Money? Resources? Will it make their job easier or free them up for more meaningful, engaging work? The answers to those questions (yes) will cultivate your pitch.

For more insight on implementing AI strategies for your PMO, watch the webinar **"The Robots Are Coming, But It's Going to Be Okay"** featuring guest presenter, Andy Jordan.



2. Help them understand the current situation: What is the opportunity cost of status quo?

If there's one thing humans hate more than change, it's the fear of missing out. Another strategy that can help you bridge the AI gap and speed up user adoption is to outline just how many benefits might be lost in the failure to adopt. How much opportunity is being missed? How much underperformance is flying under the radar and slowly decaying value from within? Or, as Andy Jordan, President of Roffensian Consulting, so boldly puts it, "What is it costing us to do so badly?"

3. Remain objective.

Although you want to become an enthusiastic AI evangelist, it's important to know when to be quiet and let the evidence speak for itself. For the toughest skeptics, resistance will be overcome with data and facts, not opinions. In fact, by listening to your resisters' objections, you may even discover challenges or issues you never thought of while touting the benefits. Not only will this information help you get ahead of problems, your active listening, combined with tangible evidence, might just soften your more stoic resisters toward your cause.

5 Steps to Select the Right AI/PPM Partner

In addition to overcoming objections to change, it's important to find the right partner to support your AI goals. Aligning your goals with the vendor, in addition to the offerings of the vendor, will ensure you have a solution you can rely on for the long run. Consider the growth and vision of the provider you are evaluating to see how they aligns with the growth and goals of your business. Here are steps to take when evaluating vendors:

1. Internal Assessment: Don't just pick a tool off the shelf. Take the time to examine your needs and outline them clearly so you know exactly what you are looking for before you start your search. If you are unsure about a feature, make a note to ask potential vendors so you can make a more educated decision based on their response.

2. Market Assessment: Take a look at what is out there and begin to gauge what solution might be right for you. What features will work for your business? Which tools are too big or expansive for your needs and why? Which ones are too small?

3. Partner Selection: This consideration is more important than the software itself because a big, expensive platform with no support or education on how to use it might as well stay on the shelf. You can probably point to software in your organization right now with features you still do not know how to use. Selecting the right partner can prevent that.

4. Phased Implementation: Successful user adoption occurs when there is a methodical strategy to implementation. No one likes to be tossed into the deep end of the pool as their first introduction to swimming, and no one likes to be tossed into the deep end of an AI implementation either. Management is the key to successful change and it begins with a methodical, evidence-based approach.

5. Continuous Evolution: Recognize that you are never done — and that's a good thing. Once you have your AI in place, begin to look for new ways to apply it in your organization. Not only that, but also look at the ways you can utilize the freed-up capacity you now have thanks to AI's automation of formerly time-intensive tasks. The possibilities are limitless if you are creative in your thinking and execution.

"You are looking to invest in the relationships that come with the software and with the help to leverage and take advantage of that software in order to achieve your goals."

Andy Jordan
President, Roffensian Consulting

Part 4: AI in Action: PMO Use Cases

Case in Point

The PMO team at one Keyedin customer was able to reprioritize a portfolio of projects spanning an entire year in a matter of weeks. This approach saved them months of planning and analysis.

Case in Point

A Keyedin customer leveraged machine learning capabilities for their PMO to improve forecast accuracy to 96% of annual projections.

Earlier in this paper, we tackled why AI is important, including the growing need for PMOs to do more with less and the need for faster, more agile change to achieve competitive advantage and organizational effectiveness. The following use cases and examples illustrate the many ways these benefits are delivered via AI.

Predictive Analytics – Intake and Scoring

What you don't know can hurt your business. Leverage AI predictive analytics to uncover constraints, bottlenecks and other issues before a project is underway — or before a project is even selected. Referring back to Bayes' Theorem, AI predictive analytics calculate the conditional probability of an event occurring based on information about another event that has already occurred. Algorithm-based scoring utilizes analytics to determine which projects have high value to the business.

Machine Learning – Detect Risks and Avoid Project Failure

The term “machine learning” can make people harken back to those aforementioned pop-culture references featuring berserk cyborgs. Machine learning in practice is, fortunately, a bit more mundane than angry robots. Machine learning uses pattern recognition to identify areas of improvement and risk long before they become bigger problems. Machine learning is a very common form of AI and uses your own data for insights.

Computer algorithms use data and experience to make automatic improvements. Not only does this process reduce harmful problems, it also frees up your PMO by automating small tasks that typically pile on to become a huge drain on time. Specifically, you can:

- Achieve better project outcomes with pattern recognition
- Save time and money by reducing investment in projects that won't have positive outcomes.
- More quickly cut projects that won't yield results

Decision Support – Resource Management

Even the most balanced and objective PMO is going to encounter influences that can impact their decision-making. Pet projects, office politics and upper management edicts are just a few examples of how outside influences can skew a process that should be data-driven. Decision support driven by AI is a powerful method for removing biases and unconscious influences from decision-making.

Using decision support, teams have data, rather than perceptions, to evaluate go-forward options. They also have data to back up tough decisions that contradict the desires of outside parties. After all, it's one thing for a PMO to simply tell the CEO they can't fast-track a special project; it's a much more intelligent action to show the CEO that the recommendation is backed by clinical data that illustrates the potential harm to the business or deviation from stated goals. An AI-powered PPM solution can also help you to quickly re-plan, determine which projects will need specific resources and predict scenarios based on resource constraints.

Business Acumen – Reporting and Realization

Power your business with AI for enhanced forecast accuracy, better scoping capabilities and greater returns. Continuous improvement informed by data-driven reporting translates into exponential growth — and greater benefits — using your existing resources. AI will help your PMO harness your data and use it to develop comprehensive reporting that provides them with the information they need to place the right bets at the right time using the right resources for the job.

Part 5: Conclusion

Analytical AI has become an important tool in helping organization's succeed in today's fast-paced digital economy, especially for industries that depend on robust project portfolio management. The benefits of its capabilities in supporting your PMO and enhancing your organization are plentiful, including improvements in forecasting, increased ROI, and better projections, not to mention the elimination of faulty predictions and uncertainty.

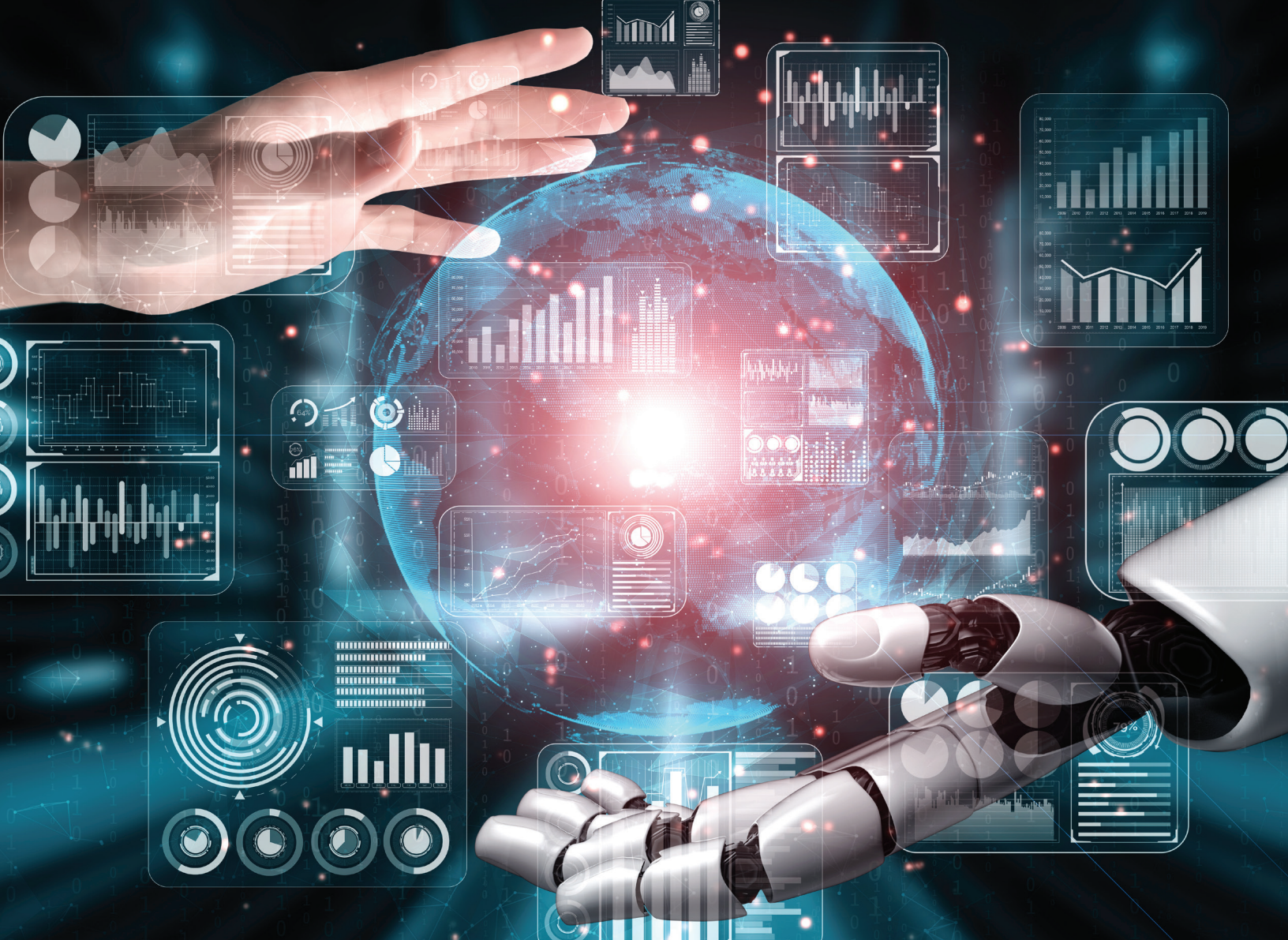
By contrast, the risks in adopting artificial intelligence are largely related to human resistance and human error. That is why implementation is a journey you shouldn't take alone. The right partner will help you achieve success and is at least as important as the right solution.

Case in Point

Decision support yields tangible benefits. One Keyedin customer reported a double number of projects completed in a single year with the same resource pool.

Case in Point

Improving organizational agility allows business to pivot and deliver faster, better results. The business relies on the PMO to be strategic in their portfolio priorities and flawless in their execution. Powered by AI capabilities, PMOs are able to deliver on these heightened expectations.



About KeyedIn™

At KeyedIn, our mission is to make our customers more successful by empowering them to place the right bets, turn quickly and deliver faster. As a leader in Agile Portfolio Management, KeyedIn offers a suite of SaaS solutions that support business transformation, strategy realization and organizational change. The company's award-winning products go beyond simple project management to encompass portfolio analysis, scenario modeling, capacity planning, product management, strategic resource management and more – supporting the evolving needs of PMOs, ePMOs and SROs. Join the hundreds of customers that have partnered with KeyedIn, including Walgreens Boots Alliance, Universal Electronics and Office Depot. Learn more by visiting www.keyedin.com.

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